

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claims 2-4, 7-12, 17-20 and 24-26, and AMEND claims 1, 5, 6, 16, 21 and 23 in accordance with the following:

1. (currently amended) A charging system to charge a battery of a robot, comprising:

a charger; having a first charging part ~~provided in the charger and~~ including a high-frequency current generator to rectify commercial power and to convert the rectified power into a high-frequency square wave signal, a primary induction coil to generate an electromagnetic field by the high-frequency square wave signal supplied from the high-frequency current generator, and;

a first terminal part to emit the electromagnetic field created by the primary induction coil, the first terminal part including an outward facing surface having a protrusion accommodating part and an inward facing surface opposite to the charger;

an elastic member connecting the charger to the inward facing surface of the first terminal part, the elastic member being elastically deformable when the robot physically contacts the charger being angled against a docking direction; and

a second charging part provided in the robot and including a second terminal part having a protrusion to mate with the protrusion accommodating part of the first terminal part, a secondary induction coil to generate an induced current by the electromagnetic field emitted from the first charging part, and a DC converter to rectify the induced current generated from the secondary induction coil and to supply DC power to the battery;

~~an elastic member elastically deformable when the robot physically contacts the charger being angled against a docking direction; and~~

~~a protrusion and a protrusion accommodating part provided in the second terminal part and the first terminal part, respectively~~

wherein

the protrusion and protrusion accommodating part both include substantially flat contact surfaces, and

if the robot moves the protrusion of the second terminal part to contact the protrusion accommodating part of the first terminal part at an angle, the elastic member deforms so that the contact surfaces of the protrusion and protrusion accommodating part come into alignment.

2-4. (cancelled)

5. (currently amended) The charging system according to claim 41, wherein at least one of the protrusion and the protrusion accommodating part is provided with guiding slants.

6. (currently amended) The charging system according to claim 41, wherein the protrusion is accommodated in the protrusion accommodating part, leaving a margin in which the protrusion is movable in a direction transverse to a docking direction.

7-12. (cancelled)

13. (original) The charging system according to claim 1, further comprising:
a charging controller provided in the second charging part to transmit a control signal to the charger.

14. (original) The charging system according to claim 13, wherein the first charging part further comprises:
a first wireless communication part to allow communication between the charger and the robot; and

a power controller to control an inverter of the high-frequency current generator in response to the control signal transmitted from the charging controller through the first wireless communication part.

15. (original) The charging system according to claim 14, wherein the second charging part further comprises:
a second wireless communication part to communicate with the charger,

wherein the charging controller controls the power controller through the second wireless communication part.

16. (currently amended) The charging system according to claim 81, wherein the elastic member comprises:

a spring elastically deformable to absorb shocks when the protrusion is accommodated in the protrusion accommodating part.

17-20. (cancelled)

21. (currently amended) The charging system according to claim 41, wherein the protrusion and the protrusion accommodating part are provided so that the robot contacts the charger within a charging position even if a position of the robot is not precisely controlled.

22. (original) The charging system according to claim 21, wherein the battery of the robot is charged even when the position of the robot is not precisely controlled.

23. (currently amended) The charging system according to claim 71, wherein the protrusion and the protrusion accommodating part are provided so that the robot contacts the charger within a charging position even if a position of the robot is not precisely controlled.

24-26. (cancelled)

27. (original) The charging system according to claim 1, wherein the battery of the robot is charged without electrical contact between the robot and the charger.

28-33. (cancelled)